

REMARKS

With the above amendments, claims 1-22 remain in the application. Claims 1, 3-6, 8-13, 18, 20, and 22 have been amended to more distinctly claim embodiments of the invention.

The specification has been amended to insert the serial number of a commonly-assigned disclosure that is incorporated by reference in the application.

No new matter has been added.

Applicants thank the Examiner for thoroughly reviewing the application and for deeming claim 19 patentable if rewritten in independent form.

Claim Rejections -- 35 U.S.C. § 112

Claims 1, 3, 4, and 8 have been amended to provide antecedent basis to terms pointed out in the last office action. Claims 1-22 have been carefully reviewed to check for other informalities.

Claim Rejections -- 35 U.S.C. § 102

Independent claim 22 stands rejected under 35 U.S.C. § 102(b) as being anticipated by U.S. Patent No. 4,619,3 to Rathmann et al. (Rathmann).

Claim 22 is patentable over Rathmann for at least reciting: "the carriage having a first magnet array...the actuator having a second magnet array rotationally locked with the first magnet array." As noted in the last office action, Rathmann uses a single magnet in a carriage, not a magnetic array. Because anticipation requires a reference to disclose all the limitations of a claim, Rathmann cannot anticipate claim 22. Furthermore, as will be explained below, the use of a magnetic array in a carriage provides advantages not disclosed or suggested in Rathmann and the other cited references.

Note that the use of a magnetic array in a carriage and magnetic configuration to form a magnetic rotation lock are recited in claims 1, 3-5, and 11-14 as originally filed. Therefore, it is respectfully submitted that addition of "magnetic array" in any of the pending claims does not raise new issues or require a new search.

Claim Rejections 35 U.S.C. § 103

Claims 1-2 and 7-9 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Rathmann in view of Japanese Patent No. 10-178083 to Takada et al. (Takada) in view of U.S. Patent No. 6,305,895 to Ozawa et al. (Ozawa).

Claim 1 is patentable over the combination of Rathmann, Takada, and Ozawa (collectively "Rathmann/Takada/Ozawa") for at least reciting: "a driven magnet array within the carriage." The use of a magnetic array in a carriage provides advantages not disclosed or suggested in Rathmann/Takada/Ozawa. Line 20, page 11 to line 2, page 14 and FIGS. 4-5 of the specification discuss the use of magnetic arrays not just to allow linear propulsion, but also to provide a magnetic rotation lock. That is, a magnetic array in a carriage may be rotationally locked with a magnetic array in an actuator to prevent other components from rotating loose and thereby disabling the linear-servo drive mechanism. FIG. 5 graphically illustrates the magnetic rotation lock between elements of two magnetic arrays. The use of magnetic arrays makes a linear-servo drive mechanism much more robust by providing a rotation lock using magnetic rather than mechanical means.

Such a magnetic rotation lock is only disclosed in the present application, not in Rathmann/Takada/Ozawa. To do so would require disclosure of magnetic arrays and corresponding magnetic configuration of the arrays. Note that Rathmann only discloses a single magnet 166 centered between (not forming a magnetic rotation lock with) two magnets 165. That is, magnet 166 is centered between magnets 165 along the shaft, but is not magnetically locked about the shaft.

For at least the above reasons, claim 1 is patentable over Rathmann/Takada/Ozawa.

Claims 2, 7, and 9 depend directly or indirectly on claim 1, and are therefore patentable over Rathmann/Takada/Ozawa for at least the same reason that claim 1 is patentable.

Claims 3-6 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Rathmann and Takada, and further in view of French Patent No. 2766028 to Lemarquand et al. (Lemarquand).

In its abstract, Lemarquand discusses the use of two adjacent permanent magnets to increase magnetic mass and torque, not to form a magnetic rotation lock. Without access to a full English translation of Lemarquand, Lemarquand does not seem to have any specific teaching or suggestion to use a magnetic array in a carriage, let alone to use a magnetic array to form a magnetic rotation lock in a linear servo drive mechanism. There is no such teaching anywhere but in the present application. Because Lemarquand does not add to Rathmann/Takada/Ozawa, claim 1 is patentable over Lemarquand/Rathmann/Takada/Ozawa.

Claim 4 depends on claim 1 by way of claim 3. Therefore, claim 4 is patentable over Lemarquand/Rathmann/Takada/Ozawa for at least the same reason that claim 1 is patentable.

Claims 10, 11, 16-18, and 20-21 stand rejected under 35 U.S.C. 103(a) as being unpatentable over Rathmann in view of Takada. Claim 10 is patentable over Rathmann/Takada at least for reciting: "a carriage having a first magnet array...the actuator magnetically coupled to the carriage using a second magnet array." As discussed in connection with claim 1, the combination of Rathmann/Takada does not disclose or suggest the use of a magnet array in a carriage. Therefore, claim 10 is patentable over Rathmann/Takada.

Claims 11 and 16-18 depend directly or indirectly on claim 10. Therefore, claims 11 and 16-18 are patentable over Rathmann/Takada for at least the same reason that claim 10 is patentable.

Claim 20 is patentable over Rathmann/Takada for at least reciting: "magnetically coupling an actuator to the carriage to allow propulsion of the carriage and to form a

rotation lock.” As discussed in connection with claim 1, the combination of Rathmann/Takada does not disclose or suggest the use of a magnetic rotation lock. Therefore, claim 20 is patentable over Rathmann/Takada.

Claim 21 depends on claim 20. Therefore, claim 21 is patentable over Rathmann/Takada for at least the same reason that claim 20 is patentable.

Claims 12-15 stand rejected under 35 U.S.C. 103(a) as being unpatentable over Rathmann/Takada/Lemarquand. For the same reason discussed in connection with claim claims 1 and 3-6, claim 10 is patentable over the combination of Rathmann/Takada/Lemarquand.

Claims 12-15 depend directly or indirectly on claim 10. Therefore, claims 12-15 are patentable over Rathmann/Takada/Lemarquand for at least the same reason that claim 10 is patentable.

Claim 19 is objected to as being dependent upon a rejected base claim. Claim 19 depends indirectly on claim 10, which is patentable over the cited references. Therefore, claim 19 is patentable over the cited references for at least the same reason that claim 10 is patentable.

Conclusion

For at least the above reasons, it is respectfully submitted that claims 1-22 are in condition for allowance. If the next communication is other than a Notice Of Allowance, the Examiner is invited to telephone the undersigned at (408)436-2112.

If for any reason an insufficient fee has been paid, the Commissioner is hereby authorized to charge the insufficiency to Deposit Account No. 50-2427.

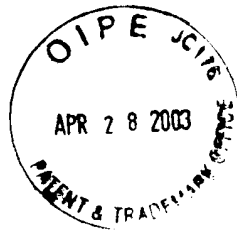
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Respectfully yours,
Thomas M. Pratt et al.

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